

AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Please amend the claims as follows:

1. (Currently amended) Surface-modified pyrogenically produced, nano-scale zinc oxide powder, comprising aggregates and having the following physico-chemical characteristic data:

BET surface areas: $18 \pm 5 \text{ m}^2/\text{g}$

C content: 0.5 to 1.0 wt.%,

average diameter: 50 to 300 nm,

shape factor F (circle) of below 0.5,

wherein the surface modification includes silanization with a surface modifying agent selected from the group consisting of:

a) Organosilanes of the type $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$ and $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n-1})$

R = alkyl, such as, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-

n = 1 – 20

b) Organosilanes of the type $\text{R}'_x(\text{RO})_y\text{Si}(\text{C}_n\text{H}_{2n+1})$ and $\text{R}'_x(\text{RO})_y\text{Si}(\text{C}_n\text{H}_{2n-1})$

R = alkyl, such as, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-

R' = alkyl, such as, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-

R' = cycloalkyl

n = 1 - 20

x+y = 3

x = 1,2

y = 1,2

c) Halogeno-organosilanes of the type $\text{X}_3\text{Si}(\text{C}_n\text{H}_{2n+1})$ and $\text{X}_3\text{Si}(\text{C}_n\text{H}_{2n-1})$

X = Cl, Br

n = 1 – 20

d) Halogeno-organosilanes of the type $\text{X}_2(\text{R}')\text{Si}(\text{C}_n\text{H}_{2n+1})$ and $\text{X}_2(\text{R}')\text{Si}(\text{C}_n\text{H}_{2n-1})$

X = Cl, Br

R' = alkyl, such as, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-

R'=cycloalkyl

n = 1 – 20

e) Halogeno-organosilanes of the type

$X(R')_2Si(C_nH_{2n+1})$ and $X(R')_2Si(C_nH_{2n-1})$

X = Cl, Br

R' = alkyl, such as, methyl-, ethyl-, n-propyl-, i-propyl-, butyl-

R'=cycloalkyl

n = 1 – 20

f) Organosilanes of the type $(RO)_3Si(CH_2)_m-R'$

R = alkyl, such as methyl-, ethyl-, propyl-

m = 0,1 - 20

R' = methyl-, aryl ($-C_6H_5$, substituted phenyl radicals)

$-C_4F_9$, $-OCF_2-CHF-CF_3$, $-C_6F_{13}$, $-O-CF_2-CHF_2$

$-NH_2$, $-N_3$, $-SCN$, $-CH=CH_2$, $-NH-CH_2-CH_2-NH_2$,

$-N-(CH_2-CH_2-NH_2)_2$

$-OOC(CH_3)C=CH_2$

$-OCH_2-CH(O)CH_2$

$-NH-CO-N-CO-(CH_2)_5$

$-NH-COO-CH_3$, $-NH-COO-CH_2-CH_3$, $-NH-(CH_2)_3Si(OR)_3$

$-S_X-(CH_2)_3Si(OR)_3$

$-SH$

$-NR'R''R'''$ (R' = alkyl, aryl; R'' = H,

alkyl, aryl; R''' = H, alkyl, aryl, benzyl,

$C_2H_4NR''''R'''''$ where R'''' = H, alkyl and

R''''' = H, alkyl)

g) Organosilanes of the type $(R'')_x(RO)_ySi(CH_2)_m-R'$

R'' = alkyl $x+y = 2$

= cycloalkyl $x = 1, 2$

y = 1, 2

m = 0,1 to 20

R' = methyl-, aryl ($-C_6H_5$, substituted phenyl radicals)

$-C_4F_9$, $-OCF_2-CHF-CF_3$, $-C_6F_{13}$, $-O-CF_2-CHF_2$

$-NH_2$, $-N_3$, $-SCN$, $-CH=CH_2$, $-NH-CH_2-CH_2-NH_2$,

$-N-(CH_2-CH_2-NH_2)_2$

$-OOC(CH_3)C=CH_2$

$-OCH_2-CH(O)CH_2$

$\text{-NH-CO-N-CO-(CH}_2\text{)}_5$
 -NH-COO-CH_3 , $\text{-NH-COO-CH}_2\text{-CH}_3$, $\text{-NH-(CH}_2\text{)}_3\text{Si(OR)}_3$
 $\text{-S}_x\text{-(CH}_2\text{)}_3\text{Si(OR)}_3$
 -SH
 $\text{-NR'R''R'''} \text{ (R' = alkyl, aryl; R'' = H, alkyl, aryl; R''' = H, alkyl, aryl, benzyl, C}_2\text{H}_4\text{NR'''' R'''' where R'''' = H, alkyl and R'''' = H, alkyl)}$

h) Halogeno-organosilanes of the type $\text{X}_3\text{Si(CH}_2\text{)}_m\text{-R'}$

$\text{X} = \text{Cl, Br}$

$m = 0, 1 - 20$

$\text{R' = methyl-, aryl (-C}_6\text{H}_5\text{, substituted phenyl radicals)}$

$\text{-C}_4\text{F}_9$, $\text{-OCF}_2\text{-CHF-CF}_3$, $\text{-C}_6\text{F}_{13}$, $\text{-O-CF}_2\text{-CHF}_2$
 -NH_2 , -N_3 , -SCN , -CH=CH_2 ,
 $\text{-NH-CH}_2\text{-CH}_2\text{-NH}_2$
 $\text{-N-(CH}_2\text{-CH}_2\text{-NH}_2\text{)}_2$
 $\text{-OOC(CH}_3\text{)C=CH}_2$
 $\text{-OCH}_2\text{-CH(O)CH}_2$
 $\text{-NH-CO-N-CO-(CH}_2\text{)}_5$
 -NH-COO-CH_3 , $\text{-NH-COO-CH}_2\text{-CH}_3$, $\text{-NH-(CH}_2\text{)}_3\text{Si(OR)}_3$
 $\text{-S}_x\text{-(CH}_2\text{)}_3\text{Si(OR)}_3$
 -SH

i) Halogeno-organosilanes of the type $\text{(R)X}_2\text{Si(CH}_2\text{)}_m\text{-R'}$

$\text{X} = \text{Cl, Br}$

$\text{R} = \text{alkyl, such as methyl-, ethyl-, propyl-}$

$m = 0, 1 - 20$

$\text{R' = methyl-, aryl (-C}_6\text{H}_5\text{, substituted phenyl radicals)}$

$\text{-C}_4\text{F}_9$, $\text{-OCF}_2\text{-CHF-CF}_3$, $\text{-C}_6\text{F}_{13}$, $\text{-O-CF}_2\text{-CHF}_2$
 -NH_2 , -N_3 , -SCN , -CH=CH_2 , $\text{-NH-CH}_2\text{-CH}_2\text{-NH}_2$,
 $\text{-N-(CH}_2\text{-CH}_2\text{-NH}_2\text{)}_2$
 $\text{-OOC(CH}_3\text{)C=CH}_2$
 $\text{-OCH}_2\text{-CH(O)CH}_2$
 $\text{-NH-CO-N-CO-(CH}_2\text{)}_5$
 -NH-COO-CH_3 , $\text{-NH-COO-CH}_2\text{-CH}_3$, $\text{-NH-(CH}_2\text{)}_3\text{Si(OR)}_3$,
 wherein R can be methyl-, ethyl-, propyl-, butyl-

-S_x-(CH₂)₃Si(OR)₃, wherein R can be methyl-, ethyl-, propyl-, butyl-
-SH

j) Halogeno-organosilanes of the type (R)₂X Si(CH₂)_m-R'

X = Cl, Br

R = alkyl

m = 0, 1 - 20

R' = methyl-, aryl (-C₆H₅, substituted phenyl radicals)

-C₄F₉, -OCF₂-CHF-CF₃, -C₆F₁₃, -O-CF₂-CHF₂

-NH₂, -N₃, -SCN, -CH=CH₂, -NH-CH₂-CH₂-NH₂

-N-(CH₂-CH₂-NH₂)₂

-OOC(CH₃)C = CH₂

-OCH₂-CH(O)CH₂

-NH-CO-N-CO-(CH₂)₅

-NH-COO-CH₃, -NH-COO-CH₂-CH₃, -NH-

(CH₂)₃Si(OR)₃

-S_x-(CH₂)₃Si(OR)₃

-SH

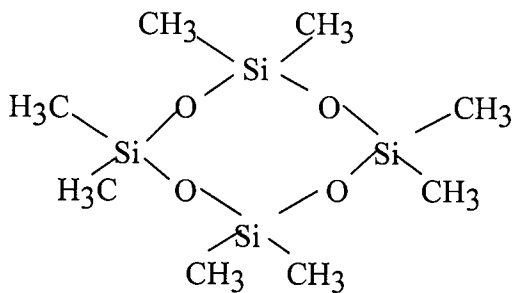
k) Silazanes of the type R'R₂Si-N-SiR₂R'



R = alkyl, vinyl, aryl

R' = alkyl, vinyl, aryl

l) Cyclic polysiloxanes of the type D 3, D 4, D 5, wherein D 3, D 4 and D 5 are understood as cyclic polysiloxanes with 3, 4 or 5 units of the type -O-Si(CH₃)₂-.E.g. octamethylcyclotetrasiloxane = D 4



$$\text{Y-O-} \left[\left(\begin{array}{c} \text{R} \\ | \\ \text{Si-O} \\ | \\ \text{R}' \end{array} \right)_m - \left(\begin{array}{c} \text{R}'' \\ | \\ \text{Si-O} \\ | \\ \text{R}' \end{array} \right)_n \right]_u \text{-Y}$$

$m = 0, 1, 2, 3, \dots, \infty$
 $n = 0, 1, 2, 3, \dots, \infty$
 $u = 0, 1, 2, 3, \dots, \infty$

$\text{Y} = \text{CH}_3, \text{H}, \text{C}_n\text{H}_{2n+1} \quad n=1-20$
 $\text{Y} = \text{Si}(\text{CH}_3)_3, \text{Si}(\text{CH}_3)_2\text{H}$
 $\text{Si}(\text{CH}_3)_2\text{OH}, \text{Si}(\text{CH}_3)_2(\text{OCH}_3),$
 $\text{Si}(\text{CH}_3)_2(\text{C}_n\text{H}_{2n+1}) \quad n=1-20$

4. (Cancelled)

5. (Previously presented) A process for the preparation of the surface-modified pyrogenically produced zinc oxide powder according to Claim 1, comprising optionally spraying zinc oxide with water, treating said zinc oxide with the surface-modifying agent in vapour form and then heat-treating the resulting zinc oxide at a temperature of 50 to 800°C over a period of 0.5 to 6 hours to thereby obtain the surface-modified zinc oxide.

6. (Cancelled)

7. (Previously presented) A cosmetic preparation comprising a dermatologically acceptable carrier and the surface-modified pyrogenically produced zinc oxide powder of Claim 1.

8. (Cancelled)

9. (Previously presented) A sunscreen preparation comprising a dermatologically acceptable carrier and the surface modified pyrogenically produced zinc oxide powder of Claim 1.

10. (Cancelled)

11. (Previously presented) The sunscreen preparation according to Claim 9, wherein the dermatologically acceptable carrier is a member selected from the group consisting of octocrylene, ethylhexyl methoxycinnamate, phenylbenzimidazole sulfonic acid, and bis-ethylhexyloxy methoxyphenyl triazine.

12. (Cancelled)

13. (Cancelled)

14. (Previously presented) The surface-modified pyrogenically produced zinc oxide powder according to Claim 1 wherein the zinc oxide powder displays at its surface an oxygen concentration as non-desorbable moisture in the form of Zn-OH and/or Zn-OH₂ units of at least 40%.